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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/622,513	07/21/2003	Kenichi Fujita	030812	3785

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EXAMINER

RONESI, VICKEY M

ART UNIT	PAPER NUMBER
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1714

DATE MAILED: 06/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/622,513	Applicant(s) FUJITA ET AL.	
	Examiner Vickey Ronesi	Art Unit 1714	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 March 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 7-12 is/are pending in the application.
- 4a) Of the above claim(s) 7-10 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 11 and 12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

RE

DETAILED ACTION

1. Claims 7-12 are now pending in the application.
2. The 35 USC 102(a) rejection over Takeda (JP 2002-369629) is withdrawn in light of applicant's submission on 3/16/2005 of the English-language translation of the Japanese patent document 2002-223896 to which applicant claimed priority. The papers have been made of record in accordance with 37 CFR 1.55.
3. All other outstanding objections and rejections are withdrawn in light of applicant's cancellation of claims 1-6 in amendment filed 3/16/2005.
4. The terminal disclaimer filed on 3/16/2005 disclaiming the terminal portion of any patent granted on this application which would extend beyond the expiration date of copending Application No. 10/660,745 has been reviewed and is accepted. The terminal disclaimer has been recorded.
5. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior office action.
6. The new grounds of rejection set forth below are necessitated by applicant's amendment filed on 3/16/2005. In particular, new claim 11 when dependent on claim 8 contains a combination of limitations not present in the original claims. Thus, the following action is properly made final.

Election/Restrictions

7. Newly submitted claims 7-10 are directed to an invention that is independent or distinct from the invention originally claimed for the following reasons:

Claims 7-10, drawn to a process, classified in class 523, subclass 351 are patentably distinct from claims 11 and 12, drawn to a composition, classified in class 524, subclass 404.

The inventions are distinct, each from the other because:

Claims 7-10 and claims 11 and 12 are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case, the master batch and the corresponding heat radiation shielding transparent laminate can be produced by mixing the ingredients in a single step. Note that the laminate of claim 11 and the master batch of claim 12 have been considered as “composition” claims and no weight given to the term “master batch” since the minimal structure of the laminate and the composition of the master batch do not serve to significantly differentiate themselves from a composition for search and examining purposes.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 7-10 are withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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8. Claim 12 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The alternative expression for “X” in claims 12 is indefinite given that the conjunctive word “and” suggests all of the foregoing elements yet the term “at least one” necessitates the use of alternative expressions, “or” or “and/or,” or proper Markush language, “selected from the group consisting of...and”.

Claim Rejections - 35 USC § 102

9. Claim 11 is rejected under 35 U.S.C. 102(b) as anticipated by Fisher (US 2002/0086926).

Claim 11 is a product-by-process claim and therefore “even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process.” See *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985).

Fisher discloses an IR absorbing polyvinyl butyral composition comprising lanthanum hexaboride particles having a particle size less than 200 nm, preferably ranging from 5 to 200 nm (paragraph 0019), in an amount ranging from about 0.005 to about 0.1 wt % based on the entire composition (paragraph 0015) that is used as an interlayer in glass laminates (paragraph 0012). Note examples 1, 6, and 7 where LaB₆ has been calculated to be present in an amount of 0.01, 0.02, 0.03, and 0.04 parts by weight per 100 parts by weight polyvinyl butyral.

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In light of the above, it is clear that Fisher anticipates the presently cited claims.

Claim Rejections - 35 USC § 103

10. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fisher (US 2002/0086926) in view of Takeda et al (JP 2000-169765, cited on IDS dated 7/21/03).

The discussion with respect to Fisher as set forth in paragraph 9 above is incorporated here by reference.

Fisher discloses the use of lanthanum hexaboride as an IR absorbing material; however, it does not disclose the use of other lanthanide hexaborides and calcium hexaboride as presently claimed.

Takeda et al discloses a sunlight-shielding coating solution that utilizes fine hexaboride particles to impart sunlight-shielding properties which include compounds XB_6 where X = La, Ce, Nd, Gd, Tb, Dy, Ho, Sm, Eu, Er, Tm, Yb, Lu, Sr, or Ca (abstract).

In view of Takeda et al's recognition that lanthanum hexaboride and other lanthanide hexaborides and calcium hexaboride are equivalent and interchangeable, it would have been obvious to one of ordinary skill in the art to substitute lanthanide hexaboride with any of the hexaborides disclosed by Takeda et al and thereby arrive at the presently cited claims. Case law holds that the mere substitution of an equivalent (something equal in value or meaning, as taught by analogous prior art) is not an act of invention; where equivalency is known to the prior art, the substitution of one equivalent for another is not patentable. See *In re Ruff* 118 USPQ 343 (CCPA 1958).

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11. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fisher (US 2002/0086926) alone or Fisher (US 2002/0086926) in view of Takeda et al (JP 2000-169765) and further in view of Hall (EP 0 459 704).

The discussion with respect to Fisher and Takeda et al in paragraphs 9 and 10 above is incorporated here by reference.

Fisher does not disclose thermoplastic resins as presently claimed; however, Fisher discloses that other polymers which are used to form interlayer sheets of glass laminated could be substituted for the preferred PVB.

Hall discloses an impact-resistant windshield for pressurized aircraft and teaches that acrylic and polycarbonate energy-absorbing glass laminate interlayers provide improved impact properties at elevated temperatures than conventional energy-absorbing glass laminate interlayers such as polyvinylbutyral and polyurethane which only provide satisfactory performance at low and normal ambient temperatures (col. 1, lines 25-44).

Given that Fisher is open to thermoplastic resins other than PVB and given that Hall teaches the benefit of acrylic and polycarbonate interlayer in glass laminates, it would have been obvious to one of ordinary skill in the art to substitute the PVB of Fisher with an acrylic or polycarbonate resin and thereby arrive at the presently cited claim.

12. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fisher (US 2002/0086926) alone or Fisher (US 2002/0086926) in view of Takeda et al (JP 2000-169765) and further in view of Hall (EP 0 459 704) and Wypych (*Handbook of Fillers*).

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The discussion with respect to Fisher, Takeda et al, and Hall in paragraphs 9, 10, and 11 above is incorporated here by reference.

Fisher does not disclose that its hydrophilic hexaboride is surface-treated with a silane compound as presently claimed; however, PVB is a hydrophilic polymer.

Handbook of Fillers teaches that hydrophilic fillers do not easily combine with hydrophobic polymers and that by changing the filler's surface character from hydrophilic to hydrophobic with a silane compound increases the interaction between the filler and the polymer matrix thereby improving filler dispersion and rheological properties (page 312).

Therefore, if one substituted PVB of Fisher with a hydrophobic polymer such as those presently claimed and as discussed in paragraph 6 above, it would have been obvious to one of ordinary skill in the art to surface-treat its hexaboride filler with a hydrophobing agent such as a silane compound to improve dispersion and rheological properties as taught by *Handbook of Fillers* and thereby arrive at the presently cited claim.

Response to Arguments

13. Applicant's arguments filed 3/16/2005 have been fully considered but they are not persuasive. Specifically, applicant argues that Fisher does not refer to its hexaborides as hydrophilic or as a filler and that therefore there is no motivation in Fisher to modify the surface of the hexaboride as taught by *Handbook of Fillers*.

Examiner agrees that Fisher does not expressly disclose that its hexaborides are hydrophilic (even though they intrinsically are since they are ionic compounds), however, it does not need to since its resin, polyvinyl butyral, is hydrophilic and would not necessarily require an

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adhesion promoter such as a silane. Note that the utilization of hydrophobic thermoplastic resin as advantageously taught by Hall in Fisher necessitates the use of a surface treatment to compatibilize the hexaborides with Hall's resin.

To the point that the hexaboride is not a filler and therefore the teachings from *Handbook of Fillers* are irrelevant, examiner agrees that the hexaborides are not utilized as fillers in the conventional sense (i.e., to enhance bulk) but maintains that the teachings of an inorganic particle in a polymeric matrix and the means of improving the interaction between the two as taught by *Handbook of Fillers* are relevant given that the interaction between a polymeric matrix and an inorganic particle is fundamentally identical regardless of end use.

Conclusion

14. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

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Contact Information

19. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vickey Ronesi whose telephone number is (571) 272-2701. The examiner can normally be reached on Monday - Friday, 8:30 a.m. - 5:00 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on (571) 272-1119. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

6/1/2005

VR



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